

LEARN BY DOING
Creating a TrendStats Chart

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Overview of TrendStats charts

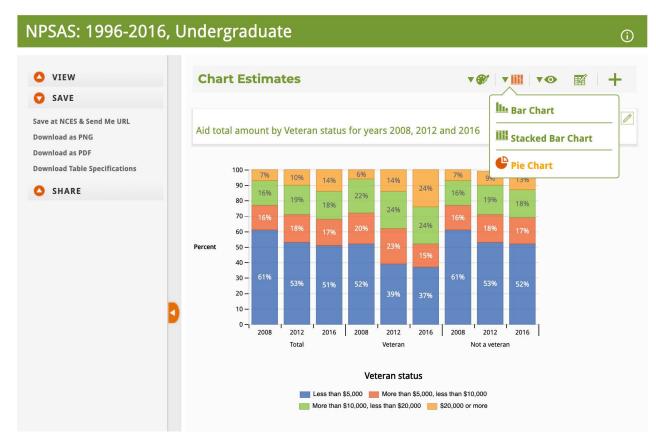
Introduction

Part of the DataLab suite of tools, TrendStats generates trends analyses spanning multiple study administrations.

In addition to generating trends analyses, TrendStats produces bar charts, pie charts, stacked bar charts, and line charts. Each chart style can be customized and saved.

The first part of this tutorial presents an overview of the major features of the TrendStats workspace, output page, and the various menus and options windows throughout the application.

The second part of this tutorial guides users through the six steps required to create a data visualization in TrendStats.



The image above shows a stacked bar chart created using TrendStats.

Log in to DataLab

Instructions

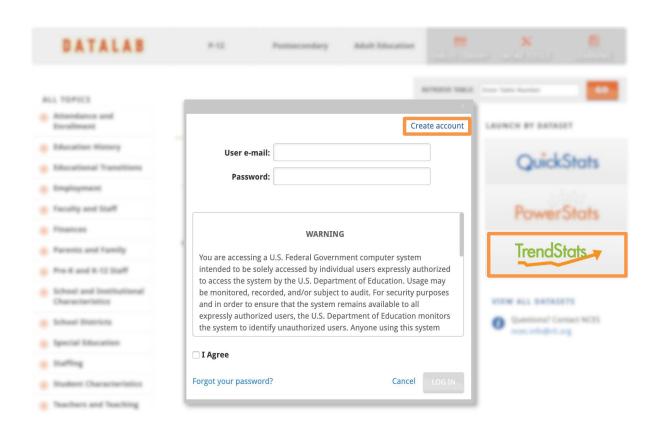
TrendStats is available through the DataLab homepage at https://nces.ed.gov/DataLab.

TrendStats and PowerStats require DataLab user accounts; accounts are used to store recent work and user settings. To log in to TrendStats, do the following:

- Click on the TrendStats button to expand the survey selection menu and select a dataset.
- 2. Enter your user e-mail address and password in the provided fields.
- View the usage agreement under the heading labeled "Warning," then select I Agree and click the Login button—this will launch TrendStats.

Note

If you do not have a DataLab account, you can create one by selecting the Create Account link at the top right of the login window and following the prompts.



TrendStats charts workspace

Overview of features

1. Variable menu

Variables are listed here by topic and can be sorted by available year. Click and expand a subject to see variables within the subject.

2. Y-axis variable area

Y-axis variable selections appear here. Variables can be added to variable areas through click and drag.

3. X-axis variable area

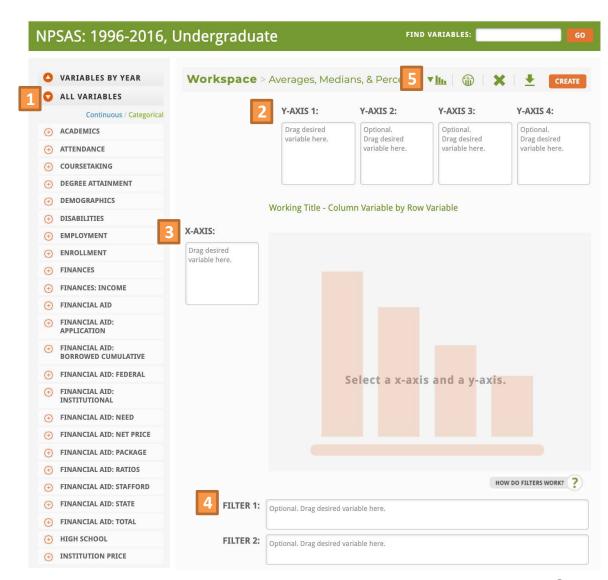
X-axis variable selections appear here.

4. Filter variable area

Filter selections appear here.

5. Workspace menu

The menu options allow you to change the chart type, clear selections, download chart specifications, or run your analysis.



Variable menu

Overview

TrendStats variables are listed by subject in the variable menu.

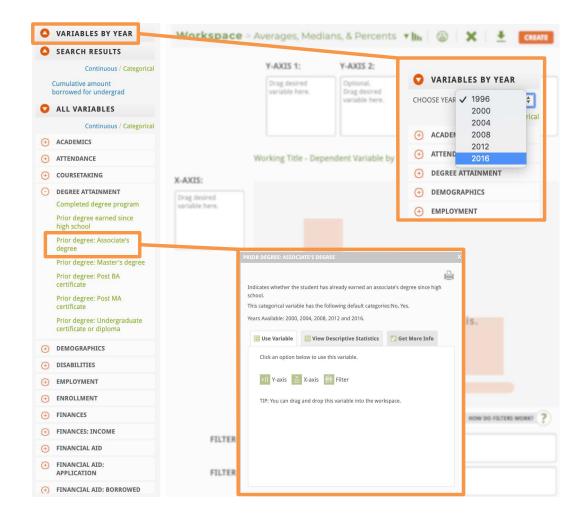
The variable menu is on the left-hand side of the TrendStats workspace. Variable subjects are listed alphabetically under the heading labeled "All Variables." Click and expand a subject to see all variables within that subject.

To limit variables by available year, click the heading labeled "Variables by Year" and choose a year from the dropdown menu (see the highlighted image to the right).

Variables can be dragged from the variable menu directly to the x-axis, y-axis, or filter areas of the TrendStats workspace to add variables to your analysis.

Clicking on a variable will launch the variable options window (see the highlighted image to the right).

Learn more about the variable options window on the following page.



Variable options window

Overview

The variable options window includes various variable action options and additional information regarding the variable. The variable description appears at the top of the options window, and the three tabs below contain the following:

1. Variable option buttons

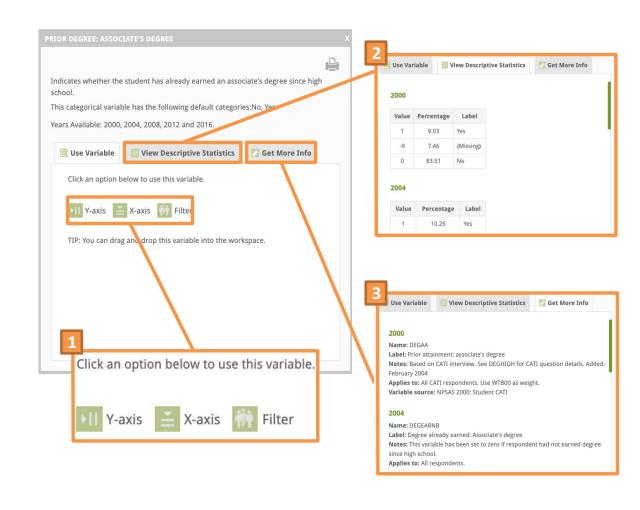
These action buttons can add a variable to the y-axis or x-axis or as a filter. Variables can also be dragged into the workspace

2. View descriptive statistics

The View Descriptive Statistics tab includes detailed information about variable categories and response distributions for each survey year for which the variable is available.

3. Get more info

The *Get More Info* tab includes additional variable metadata (such as notes, variables sources, and programming notes) for each survey year that the variable is available.



Search for variables

Search by term

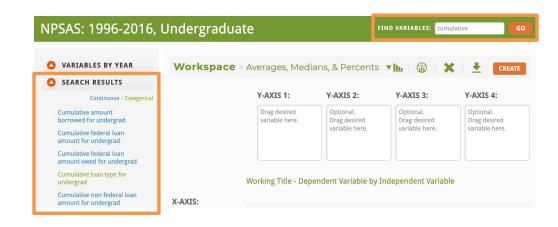
You can search for variables using search terms, for example, "cumulative" or "borrowed." To search by search term, enter the search term (e.g., "cumulative") in the box labeled "Find Variables."

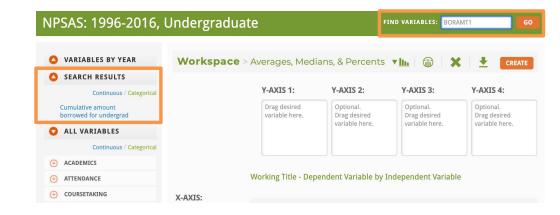
Variables with "cumulative" in their label appear in the left-hand variable menu under the heading "Search Results."

Search by variable name

If you know the name of the variables you wish to use, you can search for them by name. To search by variable name, enter the variable name (e.g., "BORAMT1") in the box labeled "Find Variables."

Results for BORAMT1 appear in the left-hand variable menu under the heading "Search Results."





Customize variable categories

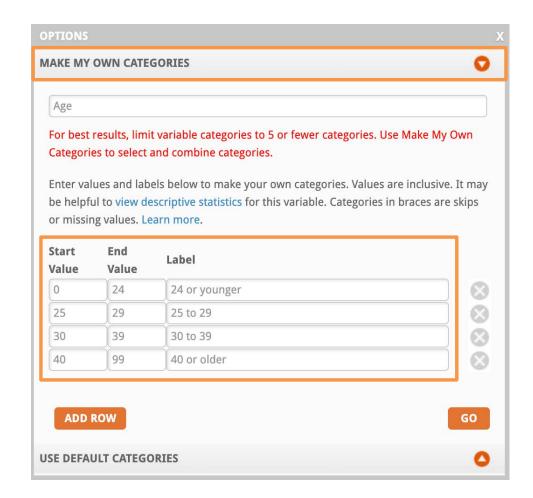
Make my own categories

Users may create custom variable categories in TrendStats. This is particularly useful for continuous variables (e.g., Total Aid Amount, Grade Point Average, Age) and for combining variable categories for variables with large numbers of categories (e.g., Field of Study). The example to the right shows the *Make My Own Categories* window for the continuous variable Age. To make custom categories, do the following:

- 1. Expand the ribbon labeled "Make My Own Categories."
- 2. Enter start and end values for each category being created, then enter a corresponding category label.
- 3. Click the *Go* button to add the variable or the *Add Row* button to add additional variable categories.

Tip

For Percentage Distribution analyses, limiting the number of y-axis variable categories to five or fewer is recommended. For all analysis types, limiting the number of x-axis variable categories to five or fewer is recommended.



TrendStats charts output page

Overview of features

1. View

Toggle between the chart, tables of estimates and standard errors, or a printer-friendly view.

2. Save

Save the chart in TrendStats for later retrieval, download as a CSV, PNG, and PDF, or download chart specification.

3. Share

E-mail the chart to a friend or colleague.

4. Change color

Toggle between chart color palettes, including a neutral, bold, and black and white palette.

5. Change chart type

Toggle between chart types, including bar chart, stacked bar chart, pie chart, and line chart.

6. Change view

Toggle between Web view and Print view.

7. Edit chart

Click to return to the chart workspace and edit the analysis.



8. New chart

Click to create a new chart.

9. Adjust for inflation

Adjust chart dollar values for inflation. *Learn more on pg. 19.*

10. Edit title

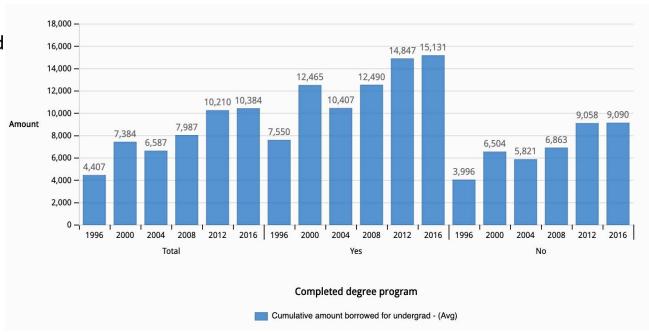
Click the pencil icon to edit the chart title.

Exercise: Creating a chart in TrendStats

This exercise will guide you through the six steps required to create the bar chart below.

This example bar chart shows the average amount borrowed for undergraduate education, by the respondent's degree completion status, for the years 1996, 2000, 2004, 2008, 2012, and 2016.

The chart uses data from the National Postsecondary Student Aid Study (NPSAS), Undergraduate Students dataset.



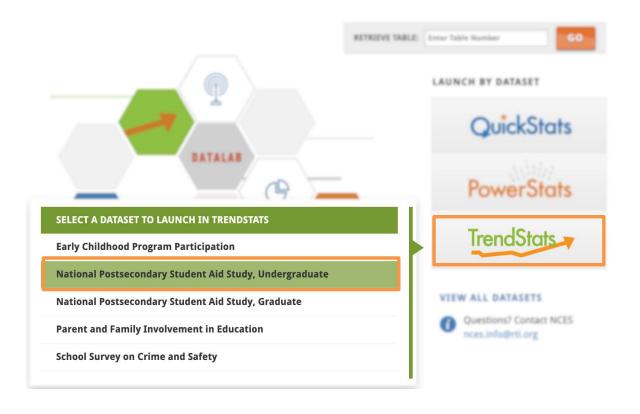
Step 1. Select survey and launch TrendStats

Instructions

To access TrendStats, visit the DataLab homepage at https://nces.ed.gov/DataLab

To select the NPSAS Undergraduate Students dataset in TrendStats, do the following:

- Click the TrendStats button under the Launch by Dataset heading the dataset selection menu will expand.
- Scroll down and select the dataset labeled National Postsecondary Student Aid Study, Undergraduate—the login window will launch.



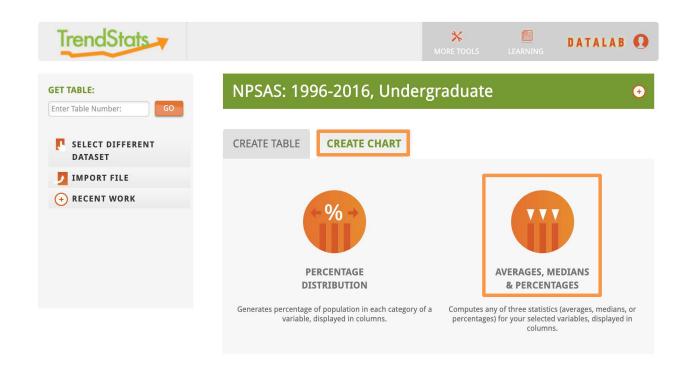
Step 2. Select analysis and chart type

Instructions

TrendStats generates four types of analyses: percentage distributions, averages, medians, and percentages.

The bar chart featured on pg. 9 presents averages. To launch the *Averages, Medians & Percentages* workspace, do the following:

- Select the Create Chart tab, highlighted in the image to the right.
- Select the button labeled
 Averages, Medians &
 Percentages—the workspace will launch.



Step 2. Select analysis and chart type

Instructions

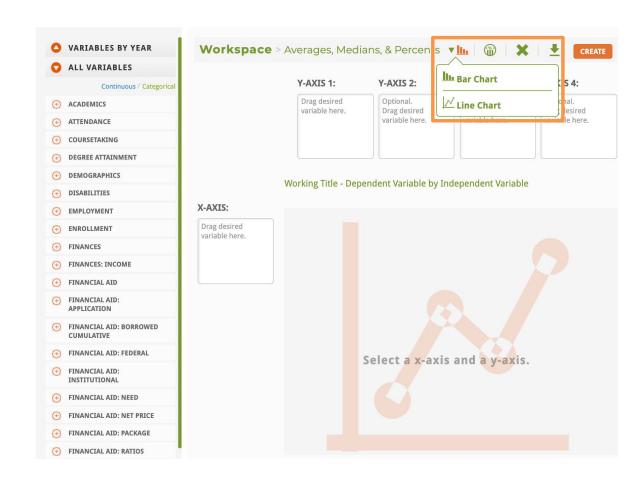
TrendStats generates two types of data visualizations for *Averages*, *Medians & Percentages*: bar charts and line charts.

Bar charts are the default visualization type in the *Averages, Medians & Percentages* workspace. To change the chart type, do the following:

- Find the bar chart icon in the workspace menu (highlighted in the image to the right) to expand the chart dropdown menu.
- Click the Line Chart icon to switch to a line chart. Switch back to a bar chart to continue creating the chart on pg. 9.

Tip

In addition to bar charts, the Percentage Distribution analysis in TrendStats generates pie charts and stacked bar charts.



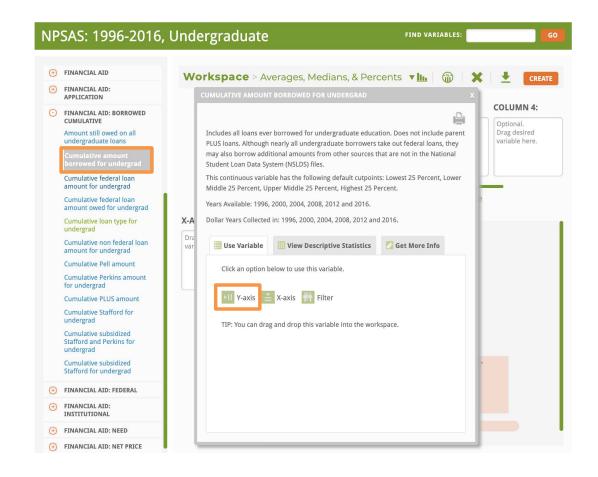
Step 3. Select y-axis variable

Instructions

Y-axis (dependent) and x-axis (independent) variables must be added to create a chart. To calculate an average value, begin by adding a variable to the y-axis area of the workspace.

To create the chart on pg. 9, find the variable *Cumulative Amount Borrowed for Undergrad* (BORAMT1) and add it to the y-axis. To find and select the variable, do the following:

- In the variable menu, scroll to find the subject labeled "Financial Aid: Borrowed Cumulative." Click to expand the subject.
- 2. Select the variable labeled "Cumulative Amount Borrowed for Undergrad"—this will launch the variable information window.
- 3. In the variable information window, click the *Y-axis* button or click and drag the variable label to the y-axis variable area—an *Options* window will appear.



Instructions continue on following page.

Step 3. Select y-axis variable

Instructions, cont.

The variable *Options* window lists the available analysis types and allows for additional selections and modifications.

- 1. In the *Options* window, select the ribbon labeled "Averages." This is the default option.
- 4. In the "Averages" ribbon, select the radio button labeled "With zeros." This will include values of 0 in the mean calculation.
- 5. Click the *Go* button. The workspace is now ready to calculate the average *Cumulative* Amount Borrowed for Undergrad as the yaxis.

Tip

Although the example bar chart uses only one yaxis variable, TrendStats allows for up to five different y-axis variables in an Averages, Medians & Percentages bar or line chart.

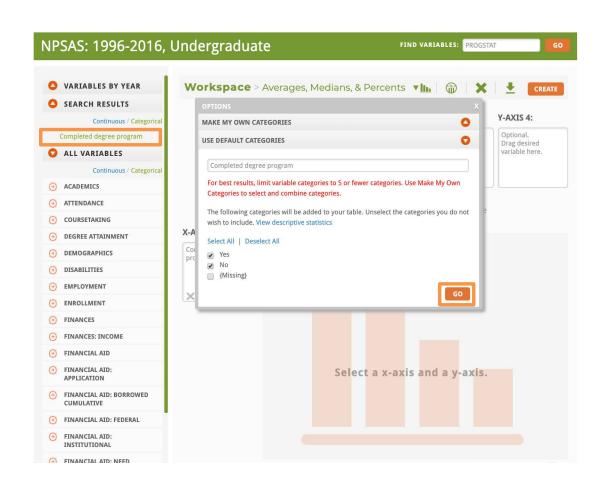


Step 4. Select x-axis variable

Instructions

To create the chart on pg. 9, the variable *Completed Degree Program (PROGSTAT)* must be added to the x-axis. To find and select the variable, do the following:

- Enter the search term "completed degree program" in the box labeled "Find Variables."
- In the variable menu, under the heading labeled "Search Results," click on the variable labeled "Completed Degree Program."
- 3. In the variable information window, click the *X-axis* button or click and drag the variable from the variable menu to the x-axis variable area—an *Options* window will appear.
- 4. In the *Options* window, under the heading labeled "Use Default Categories," review the variable category selections, then click the *Go* button—the x-axis variable is now added.

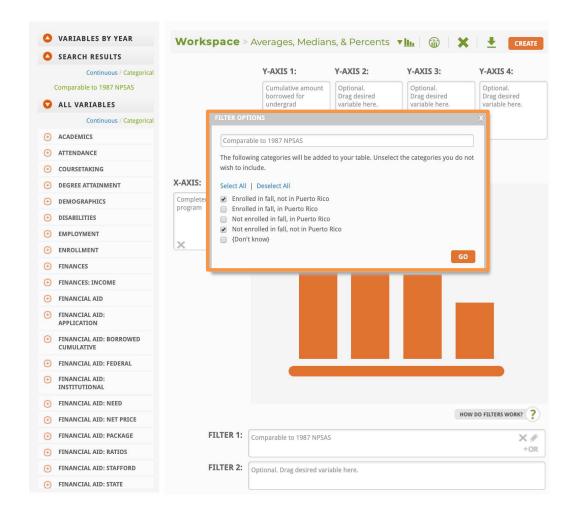


Step 5. Select filter variable

Instructions

Up to two filters can be used in TrendStats to filter chart values by selected categories. The chart on pg. 9 uses the filter *Comparable to 1987 NPSAS (COMPTO87)* to exclude Puerto Rico from the analysis. To add COMPTO87 as a filter, do the following:

- 1. Enter the variable name "COMPTO87" in the box labeled "Find Variables."
- 2. Results for COMPTO87 appear in the left-hand variable menu under the heading "Search Results." Click on the variable to open the variable information window.
- 3. In the variable information window, click the *Filter* button or click and drag the variable to the Filter 1 or Filter 2 area—a *Filter Options* window will appear.
- In the Filter Options window, select the categories labeled "Enrolled in Fall, not in Puerto Rico" and "Not enrolled in fall, not in Puerto Rico" and click the Go button—the filter is now added.



Step 6. Run analysis and adjust for inflation

Instructions

The workspace is now populated with y-axis and x-axis variables, and the analysis is ready to be processed. To run the analysis, do the following:

- Click the *Create* button—the year selection window will appear.
- Select the years 1996, 2000, 2004, 2008, 2012, and 2016 and click the Go button.

In addition, you may click the X icon to clear the workspace or the download icon to save the chart specifications.



Step 6. Run analysis and adjust for inflation

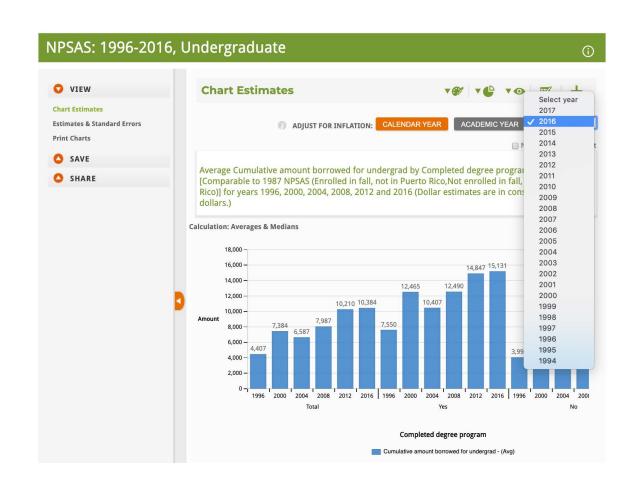
Instructions

In TrendStats, dollar-value variables can be adjusted for inflation; this is helpful for analyzing financial data across time.

The estimates in the chart on pg. 9 are adjusted to calendar year 2016 dollars. To adjust estimates for inflation, do the following:

- 1. Select the Calendar Year button.
- Expand the dropdown menu labeled "Select year," then click on "2016"—the chart estimates will automatically adjust.

TrendStats can also adjust values for inflation based on academic year. To adjust values for inflation by academic year, select the *Academic Year* button and choose an academic year from the dropdown menu.



Modify finished chart

Instructions

The image to the right shows the chart after switching to a line chart and collapsing the left-hand menu. Use the highlighted menu options to do the following:

1. Change color

Change chart colors by clicking on the color palette icon. Options include neutral, bold, and black and white palettes.

2. Change chart type

Change the chart type by clicking on the pie chart icon.

3. Change view

Switch from Web view to Print view by clicking on the eye/view icon.

Tip

Use the Web view to see interactive chart components, such as value labels, when hovering over the chart with a mouse. Use the Print view to see all values and legends printed directly on the chart.



Learn more about NCES and DataLab

Explore DataLab

To learn more about TrendStats, PowerStats, and QuickStats and create other custom analyses, visit the DataLab homepage at https://nces.ed.gov/DataLab

Learn more about NCES

To learn more about the National Center for Education Statistics (NCES) and about other surveys, programs, and data tools, visit the NCES homepage at https://nces.ed.gov

Contact Us

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